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10th Part of No. AAEE/868/1.

MINISTRY OF SUPPLY

AEROPLANE AND ARMAMENT EXPERIMENTAL ESTABLISHMENT

BOSCOMBE DOWN

SEA VENOM MK.20 WK.379
(GHOST 3)

RADIO ACCEPTANCE TRIALS

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10/51 (A1068) Wt.8856/1527. 32M. 2. 5/52. H. E. & S. Gp.348

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10th Part of Report No. AAEE/868/1.

19.FEB.1954

AEROPLANE AND ARMAMENT EXPERIMENTAL ESTABLISHMENT
BOSCOMBE DOWN

Sea Venom Mk.20 WK.379
(Ghost 3)

Radio Acceptance Trials

A. & A.E.E. Ref.: AAEE/411/77/Radio.
M. O. S. Ref.: 39th Joint Meeting Ministry of Supply, Admiralty, A. & A.E.E., dated 10th October, 1951.
Period of trials: 20th April, 1953 to 1st September, 1953.

Progress of issue of Report

Report No.	Title
5th Part of AAEE/868/1	WK.376 Deck Landing Assessment and Deck Trials (by day) after Development.
6th - do -	WK.376 Brief Assessment of Longitudinal Control Characteristics including High Mach No. Behaviour and Approximate Measurements of Stick Force per 'g' After Modification.
7th - do -	WK.379 & 376 Summary of Handling Tests up to October 1952.
8th - do -	WK.379 Deck Landing Assessment and Deck Trials (by day) on the Second Prototype.
9th - do -	WK.379 A Further Deck Landing Assessment and Brief Handling on the Second Prototype.

Summary

Radio Acceptance Trials on the following equipments installed in a Sea Venom Mk.20 were required prior to C.S.(A) release being given.

AN/APX-1 (I.F.F.)	T.R.1934/35 and relay
A.Y.F.	Z.B.X.
A.I. Mk.10	A.1961 i/c Amplifier

As a result of these trials, it is considered that the above installations are acceptable for Service use, subject to embodiment into the installation, wherever possible, of the modifications listed in paras. 11.1 to 11.6.

This Report is issued with the authority of

Air Commodore,
Commanding A. & A.E.E.

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/Introduction.....

1. Introduction

1.1. Radio Acceptance Trials have been carried out on a Sea Venom Mk.20 fitted with the following equipments:-

S.C.R.720 (A.I. Mk.10) Including gun firing trials.	T.R.1934/35 and relay
A.Y.F. (Low Reading Alt.)	Z.B.X.
AN/APX-1 (I.F.F.)	A.1961 (Inter-comm.)

1.2. All trials were carried out on Sea Venom WK.379, in accordance with trials pro-forma, 39th Joint Meeting, Ministry of Supply, Admiralty, A. & A.E.E., dated 10th October, 1951.

2. Object of Trials

2.1. To clear the Sea Venom Mk.20 radio installations as detailed under para. 1.1. prior to C.S.(A) clearance.

2.2. To make recommendations for modifications, either to the installation or equipment as considered necessary.

3. Reports Issued

3.1. Reports issued:- For reference: Venom N.F.2, 10th part of A. & A.E.E. Report No. 868/2.

3.2. Included in this report:- A.I.10, A.Y.F., AN/APX-1, TR.1934/35 and relay, Z.B.X., A.1961.

3.3. Reports to follow:- Nil.

4. AN/APX-1 (A.R.I.5679)

4.1. Installation Details

4.1.1. The transmitter-receiver type AN/APX-1 was mounted on the floor behind the pilot's seat (Fig. 3), and was difficult to remove for maintenance.

4.1.2. Coding Unit type C.55/APX-1 was situated behind the pilot's seat (Fig. 3) and was satisfactory for operation.

4.1.3. Controller type C54/APX-1 was mounted on the starboard side of the cockpit (Fig. 5) in a satisfactory position for operation.

4.1.4. Controller type C.53/APX-1 was also mounted on the starboard side of the cockpit (Fig. 5) and was satisfactory for operation.

4.1.5. The I.F.F. Aerial type 90 was mounted centrally on top of the port boom (Fig. 2) and was satisfactory for operational requirements.

4.2. Procedure for Trials

4.2.1. To obtain the polar diagram of the aerial type 90, the aircraft carried out a series of straight and level runs every 10° through the full 360°, over a selected pin-point, 20 nautical miles from base at an altitude of 2000 feet.

4.2.2. To check the maximum range of the installation the aircraft was flown on a straight course from base at an altitude of 4,000 feet, observations of the I.F.F. responses being made on a standard ground interrogator.

/4.3.....

4.3. Results

4.3.1. 'A' Band Range Test. When interrogated by a standard I.F.F. ground equipment, with the aircraft flying at 4,000 feet, the maximum range on the tail aspect was 52 nautical miles, and on the head aspect 59 nautical miles; signal-to-noise ratio curves are shown in Fig. 12.

4.3.2. "Rooster" Range Test. When using a standard ground interrogator tuned to a frequency of 176 Mc/s., and the aircraft flying at 4,000 feet, the maximum range on the tail aspect was 49 nautical miles, and on the head aspect 52 nautical miles. The results are shown in Fig.12.

4.3.3. Polar Diagram. The results are shown in Fig. 11 and were considered satisfactory.

5. A.Y.F. (A.R.I.5284)

5.1. Installation Details

5.1.1. The transmitter-receiver type RT/7/APN-1 was situated behind the pilot's seat (Fig. 3) and was satisfactorily positioned for servicing.

5.1.2. The Indicator, Limit Switch and Limit Lights were all positioned on the port side of the pilot's instrument panel (Fig. 4) and were satisfactory for operation and viewing.

5.1.3. The aerials were positioned, one on the port tail plane extension, and the other on the underside of the starboard flap shroud near the fuselage (Fig. 2).

The aerials had been repositioned in accordance with para. 84 Form 555 of the Final Conference. The total length of the feeder is now 61 feet, making it very difficult to adjust some receivers to the necessary Residual Altitude of 48.75 feet. This is also very near the limit of the range of delays available from Test Set Type 16. (i.e. 51 feet absolute maximum).

The position of the aerials was satisfactory from the performance point of view.

5.2. Procedure for Trials

5.2.1. With all equipments working and a calibrated low reading barometric altimeter fitted, a series of runs were made at constant speed over the runway, at different heights, readings off both indicators being recorded.

5.3. Results

5.3.1. After temperature corrections had been applied to the barometric altimeter readings, the results of the flight test were as follows:-

Bar. Alt. Readings	A.Y.F. Readings
70	75
120	125
170	175
220	225
270	275
295	300
320	325
380	375

/5.3.2.....

5.3.2. The above results were considered satisfactory; no interference was present from any of the other radio installations.

5.3.3. Tests were carried out to determine whether the undercarriage, when lowered, affected the accuracy of the readings. The first flight which was carried out over the runway showed a positive error of 25 feet. Further flights were made over the sea and this condition could not be repeated. It was therefore assumed that the error noted on the first flight was due to abnormal flight conditions.

6. A.I.10 (A.R.I. 5570)

6.1. Installation Details

6.1.1. The Indicator was mounted in the radio cradle in front of the observer's seat (Fig. 7), and was satisfactory for operation and maintenance. When the cradle adjustment control was operated, the hand fouled the pilot's altimeter.

6.1.2. The Synchroniser Unit was also in the radio cradle immediately under the Indicator (Fig. 7), in a satisfactory position for operation and servicing.

6.1.3. The Control Unit type BC.1150C was fitted in the cradle under the Synchroniser Unit (Fig. 7), in a satisfactory position for operation and maintenance.

6.1.4. Junction Box type 253 was fitted on the Bulkhead at the rear of the nose compartment (Fig. 8) in a satisfactory position for maintenance.

6.1.5. The Scanner type RC.94A-A was mounted in the nose of the aircraft (Fig. 8) and was enclosed in a fibre glass radome, neoprene covered. This radome was also fitted with a zinc spray screen to reduce the altitude curtain, and as detailed under para. 6.3.5, prevents the full use of the -20° tilt facility.

6.1.6. The floor of the nose section had been modified (Sea Venom Mod. N.70) to improve facilities for fitting the R.F. pressurised feeder, but it was considered that a further improvement could still be made by cutting or shaping the scanner mounting plate just above the hole provided. This would enable the feeder to be fitted without stripping. The time taken to change this feeder with two personnel was 50 minutes.

6.1.7. The Modulator Unit B.C.1142A and R.F. Unit type B.C.1091A were mounted on runners attached to the bulkhead wall in the nose compartment (Fig. 8), both being satisfactory for servicing. When the modulator is being removed from its mount all connectors should be removed first.

6.1.8. The High Voltage Power Unit was fitted to the rear of the Indicator, in such a position that it had to be removed to be pressurized, this also necessitates the removal of the Indicator Unit. Either an extension to the pressurizing nozzle should be fitted, or the unit repositioned so that access to the nozzle is made easily.

6.1.9. The Low Voltage Power Unit was positioned under the observer's seat (Fig. 7), and cannot be removed for servicing without first removing the observer's seat.

6.1.10. The V.C.P. Type 5 was fitted under the observer's seat, and in order to set up the voltage control, the seat had first to be removed to provide access to the panel.

When the equipment had been installed in the aircraft, it was discovered that the V.C.P. Type 5 had not been connected. So that this could be done, cables had to be traced to their source as they were inadequately marked.

/After.....

After connecting the power supplies, it was found that the equipment would not stay switched on after pressing the "power on" button. This was found to be due to cable 13a, (Bulkhead to Junction Box), pin connections being reversed. The fault occurred because of the break at the bulkhead; the pin connections at the two ends of the cables, facing each other, should be reversed as below:-

Pin Connections:-

As found at Junction Box	At Power Unit	Correct Connections at Junction Box
2	A	1
3	B	10
5	D	8
7	E	6
8	F	5
10	H	3
11	J	12

6.1.11. The following connectors and plug positions were found to require alteration before the trials could be started:-

(a) The lead from the terminal block carrying 24 volts D.C. to the power unit Ref. 110KB/153 was not fitted when the aircraft arrived. It should be noted that a form of stowage is required for these leads, to prevent inadvertent contact with the aircraft structure when the power unit is not fitted. As the lug ends are alive, they could be dangerous if left uninsulated or not secured. One case of failure of aircraft electrical services did in fact occur due to this cause.

(b) The A.C. lead to L.V. Power Unit was missing altogether and a temporary lead had to be fitted.

(c) Plug No. 2 on Control Unit was fouling rack support, and cable entry keyway had to be altered.

(d) Plug No. 12 (Red) to Synchroniser Unit fouled the side of the rack, and cable entry keyway had to be altered.

(e) Cable 14 (Blue) to R.F. Unit was 6 inches too short.

6.1.12. It was found after the trials that a number of connectors were damaged. This was done when removing the scanner or modulator units for servicing, the main area of damage being on the forward face at the base of the bulkhead, starboard side, and it is suggested that a hinged guard be fitted for protection. A guard should also be fitted over cables on the cockpit floor, which were severely damaged by servicing personnel unwittingly standing on them.

6.1.13. A number of the criticisms detailed under paras. 6.1.1. to 6.1.12. were discussed at a meeting held at A. & A.E.E. on 20th May, 1953, and remedial action may have already been taken.

6.2. Procedure for Trial

6.2.1. To assess the performance of the installation a number of flights were made at heights varying between 400 and 38,000 feet, using jet aircraft as targets, recordings of maximum and minimum ranges being made.

6.2.2. To check that the coverage was not impaired by the zinc screen on the radome, a target, flying at the same level as the fighter, was stationed ahead on different bearings and at different distances, and told to descend. The fighter using a tilt setting of -20° watched the target disappear, and heights of target and fighter were then recorded.

/6.2.3.....

6.2.3. To assess the effect of gun firing on the equipment six bursts of 600-rounds each burst were fired in the butts.

6.2.4. A number of short duration flights were made at 38,000 feet to assess the performance of the equipment at altitude.

6.2.5. An observer's assessment of accessibility of instruments, controls and cockpit lighting, together with a complete appraisal of the equipment layout and accessibility for maintenance, are included in this Report.

6.3. Results

6.3.1. To assess the performance of the A.I.10 installation a total of 10 hours 25 minutes were flown involving 13 sorties.

6.3.2. The altitude curtain with Zinc Screen fitted. The strength of the curtain varied with the altitude at which the aircraft was flown. It was quite weak at high altitudes, but at medium and low altitudes difficulty was found in picking out the response, if exactly on the altitude line. If the response was obtained beyond the altitude curtain, it could be followed through without much difficulty.

6.3.3. The altitude line extended across the tube but, from the dead ahead position to approximately 50 degrees on either side, the curtain was quite weak. It gradually became thicker towards 90 degrees port and 90 degrees starboard. Over the sea the altitude line was more sharply defined than over land.

6.3.4. In order to check that the zinc screen was not interfering with the operational coverage of the equipment the procedure as detailed under para. 6.2.2. was adopted.

6.3.5. The results were as follows:-

Height before descending	Height Target disappeared	Angle of Azimuth Port or Starboard	Distance N. Miles	Difference in Height
30,150	29,100	0°	½	1,050
30,100	28,200	0°	1	1,900
30,300	26,450	0°	2½	3,850
30,400	24,400	0°	3¾	6,000
20,500	13,900	0°	4	6,600
18,000	12,000	30°S	3½	6,000
20,000	16,000	30°S	1½	4,000
20,000	16,700	60°P	½	3,300
18,000	12,700	60°P	2¼	5,300
18,000	12,000	60°P	3	6,000
19,000	13,500	60°P	3	6,300
20,100	17,700	30°P	1	2,400
20,000	17,700	60°S	½	2,300
20,000	15,500	60°S	2	4,500
30,400	23,400	60°S	3	7,000
21,000	13,900	60°S	3½	7,100

These figures are shown in graphical form at Fig. 13, and show that the Zinc spray pattern causes a cut-off in radiation at -15°, preventing full use of the -20° scanner tilt facility.

6.3.6. Ground Returns. The ground returns were normal for A.I. Mk.10 and no unusual observations were made.

/6.3.7.....

6.3.7. Maximum range (high altitude). The average maximum range obtained on a drop out using a Meteor as target was $5\frac{1}{4}$ nautical miles at 30,000 feet. The equipment operated quite satisfactorily at an altitude of 38,000 feet, at which height three flights were made, each of approximately 20 minutes duration.

6.3.8. Maximum range (low level). Only one sortie was flown at low level over the sea and the maximum range at 1,500 feet was $2\frac{1}{2}$ nautical miles on a Meteor target.

6.3.9. Minimum range. The minimum range obtained on the 'B' scope was approximately 500 feet.

The ranges stated above are considered to be satisfactory.

6.3.10. Gun Firing. It was not possible to carry out trials to assess the effect of gun firing on the equipment when in flight, but ground checks were made during firing trials in the butts when six bursts of 600 rounds each burst were fired. The equipment stood up to this test quite satisfactorily, only slight valve microphonic noise being noticed. As the vibration and shock to the equipment is far worse when the guns are fired on the ground than in the air, it is considered that this installation will withstand prolonged air firing sorties quite safely.

6.3.11. Serviceability. The serviceability of the equipment was not satisfactory at the beginning of the trial, but after the initial difficulties had been overcome no further faults were experienced. The main faults encountered were as follows:-

(a) Frequency Pulling.
(b) Varying brilliance on the 'B' Scope.
(c) Intermittent operation of the scanner.

It is considered that the above faults were due to unserviceability of the radar set, and not due to installation trouble.

6.3.12. Accessibility of controls. The position of the Units was satisfactory and the controls could be easily operated. When operating the control to raise or lower the radar set the observer's hand, when wearing gloves, fouled the cockpit altimeter.

When getting in and out of the cockpit it was found that the scanner ON/OFF switch was at times accidentally switched on. As this might cause an accident during servicing, it is recommended that a guard be fitted over this switch.

6.3.13. Accessibility of Instruments

(a) The two instruments in the observer's cockpit are the master indicator unit of the G.4B compass and the Air Position Indicator. The compass was not ideally situated, as it was too far aft on the port side. The A.P.I. was fitted in a workable position. It is recommended that the G.4B master indicator be fitted either above or below the A.P.I.

(b) The pilot's altimeter cannot be seen easily from the navigator's position. This is regrettable for the following reasons:-

(i) During an interception it is desirable for the observer to know the height and speed at a glance without continually asking the pilot. A knowledge of height is a help to the observer in checking range calibration of A.I. Mk.10. Moreover, the excessive use of intercomm. may prejudice the receipt of vital information over the R/T.

/(ii).....

(ii) When on D.R. navigation an altimeter and an A.S.I. or better still a T.A.S. indicator would again prove useful.

(iii) When air to ground firing and deck landing, particularly at night, many pilots like their observers to call out heights.

6.3.14. Cockpit Lighting. The U/V lighting in the observer's cockpit was not considered adequate. The switches on the starboard side were well illuminated, but a further lamp to illuminate the radar controls is necessary. No facility exists for illuminating the G.4B master indicator and A.P.I. An anglepoise lamp when fitted to the starboard side of the cockpit caused a certain amount of reflection on the instrument panel. It is recommended that provision be made for illuminating the G.4B indicator and A.P.I., and that an anglepoise lamp fitting be made on the port side of the radar control box. This would ensure that when the lamp is used it would shine away from the pilot.

6.3.15. Chart board facilities and map stowage. The chart board stowage was not considered satisfactory. It is recommended that the chart board holder be made wider and the chart board a little larger. There was no hold-all for the observer's navigational gear, and it is recommended that provision be made for this equipment - possibly behind the pilot's seat.

7. A.R.I. 5491

7.1. Installation Details

7.1.1. The T.R.1934, T.R.1935 and relay unit were mounted in the radio compartment behind the cockpit (Fig. 6). This position was satisfactory for servicing.

7.1.2. The control unit type 383 was mounted on the port side of the cockpit, adjacent to the pilot's seat and was satisfactorily positioned for operation.

7.1.3. The J.B. 148 was positioned on the starboard side of the cockpit (Fig. 5) and was satisfactory for operation and maintenance.

7.1.4. The aerial type 228 was mounted on the starboard boom, 2 feet from the trailing edge of the wing (Fig. 2). The aerial type 229 was mounted under the port wing, 3 feet 3 inches from the wing tip tank (Fig. 1).

7.2. Procedure for Trials

7.2.1. Polar Diagram. The aircraft was flown on courses at intervals of 10°, through 360°, over a predetermined pinpoint 20 nautical miles from base, at an altitude of 2,000 feet. Measurements were made as the aircraft passed, straight and level, over the centre of the pinpoint with its transmitter radiating.

7.2.2. Range Runs. The aircraft was flown on a steady course from base, at an altitude of 4,000 feet, and pinpoints were obtained when communication was lost on the tail aspect. The aircraft continued on course for a further ten miles and was then turned on to a reciprocal course and a pinpoint obtained when communication was re-established.

7.2.3. Relay Test. To check the relay system, the aircraft was flown at an altitude of 4,000 feet and transmissions were made by the ground station. When no further re-transmissions by the aircraft relay station were received by the ground station, a pinpoint was obtained.

7.3. Results

7.3.1. Polar Diagrams. The results of the polar diagram runs are given in Figures 9 and 10 and are satisfactory.

/7.3.2.....

7.3.2. Range Runs. The results of the range runs were as follows:-

T.R. 1934, Head aspect 80 nautical miles, tail aspect 80 naut. miles.
T.R.1935, Head aspect 80 nautical miles, tail aspect 82 naut. miles.

The relay range test gave a range of 76 nautical miles on all aspects.

8. A.R.I. 5307 (Z.B.X.)

8.1. Installation Details

8.1.1. The receiver was mounted behind the pilot's seat (Fig. 3). Damage is caused to the connectors on the face of the set when the pilot's seat is released. A cover is required to protect the face of the set when the seat is released.

8.1.2. The Control Unit type 345 was positioned on the starboard side of the cockpit (Fig. 5). This position was satisfactory for maintenance. The siting of the control unit was satisfactory for operation by the navigator, but was rather difficult for the pilot.

8.1.3. The aerial was mounted under the starboard boom 2 feet from the trailing edge of the wing (Fig. 2) and was satisfactory for operation.

8.2. Procedure for Trials

8.2.1. The aircraft was flown on a steady course from base, at an altitude of 4,000 feet, and a pinpoint obtained when the beacon was no longer of use for navigational purposes. The aircraft continued on course for a further five miles and was then turned on to a reciprocal course, and a pinpoint obtained when the beacon was again usable for navigational purposes.

8.3. Results

8.3.1. The result of the range run gave a range of 68 nautical miles on both head and tail aspects.

9. A.1961 - Intercommunication

9.1. Installation Details

9.1.1. The amplifier A.1961 was mounted on the floor of the cockpit on the starboard side. This position was satisfactory for maintenance.

9.2. Procedure for Trials

9.2.1. The system was used under normal operational conditions of search and interception.

9.3. Results

9.3.1. Intercommunication was satisfactory under all flight and normal operational conditions.

10. Inter-equipment Interference

10.1. There was no inter-equipment interference noted during the trials.

11. Conclusions

11.1. AN/APX-1. This installation is satisfactory from the performance point of view. The layout is also acceptable for both operation and maintenance.

/11.2.....

11.2. A.Y.F. The performance of this installation is satisfactory. It is recommended that the aerial feeders be shortened by 5 feet if possible, so that any receiver can be easily set up to the required residual delay (see para. 5.1.3.)

11.3. A.I.10

(a) Performance. This is satisfactory, providing the limitation in coverage as stated in para. 6.3.5. is acceptable to the user. This aircraft also suffers from the same defect as the Venom N.F.2, in that when the engines are throttled back, the A.I.10 equipment cuts out. This was covered fully in A. & A.E.E. Report No. 868/2 Part 10 para. 5.4.9. The limitations suggested will also apply to the Sea Venom Mk.20, i.e. that minimum engine revolutions should not fall below 6,000 R.P.M.

(b) Installation

(i) The Cockpit Altimeter should be raised to allow clearance for the radar set adjustment control.

(ii) The Scanner ON/OFF switch should be fitted with a guard, to prevent its being accidentally switched on when aircrew leave or enter the cockpit.

(iii) The Camera test switch protrudes about 1" from the side of the cockpit. This should be moved to right angles to present position, or a push button control fitted in lieu.

(iv) The G.4B master indicator should be fitted either above or below the A.P.I. (para. 6.3.13(a) refers).

(v) It is recommended that an observer's altimeter be fitted, or the existing pilots one re-positioned, so that the observer can easily see it. (para. 6.3.13(b) refers).

(vi) The cockpit lighting should be revised to include an anglepoise fitting on the port side of the Radar Control Unit (para. 6.3.14. refers).

(vii) A hold-all should be provided for the observer's gear, and the chart board made larger.

(viii) The zinc spray pattern should be altered to enable the full use of the -20° tilt position of the scanner.

(ix) It is recommended that a small notice should be provided adjacent to the connectors which are mounted on the bulkhead above the modulator, to read as follows:- "Disconnect cables from bulkhead before removing modulator".

(x) A protective guard should be fitted over the cables on the cockpit floor and also over connectors at the base of the forward bulkhead wall on the starboard side to prevent damage when removing units, etc.

(xi) A stowage should be provided to house the live ends of the 28 volt D.C. supply cables to the Low-Voltage power unit, when the Power Unit is not fitted.

(xii) An extension to the pressurising nozzle of the High Voltage Power Unit should be fitted, or the Power Unit repositioned.

(xiii) The large number of connector defects detailed under paras. 6.1.10 and 6.1.11. could have been avoided if the manufacturer had used a set of space models prior to releasing the aircraft.

/(c).....

(c) The equipment operated quite satisfactorily up to 38,000 feet.

(d) The equipment was unaffected by gun firing in the Butts, and should stand up to prolonged air firing quite satisfactorily.

11.4. T.R. 1934/35 and Relay. The equipment was satisfactory for operation and performance.

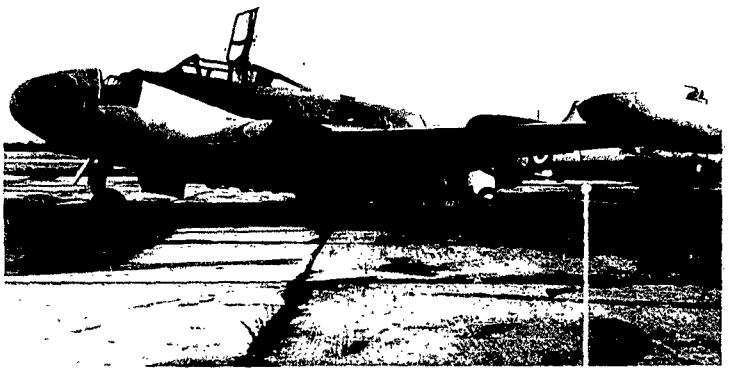
11.5. Z.B.X. The performance of the equipment was satisfactory. A cover should be provided to protect the connectors on the face of the receiver when the pilot's seat is released.

11.6. A.1961 i/c Amplifier. The performance was satisfactory under flight conditions.

Circulation List

D.L.R.D.A./A.L.10	2 copies, 1 for Action
A.D.R.D.N.	1 copy
T.P.A.3/T.I.B.	75 copies
R.T.O. de Havillands	2 copies
R.T.O. de Havillands, Christchurch.	2 copies

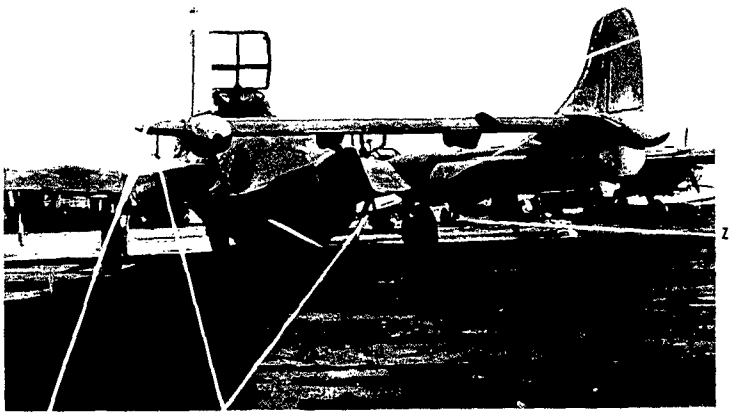
FIG.1.



Aerial Type 229

FIG.2.

Aerial Type 228

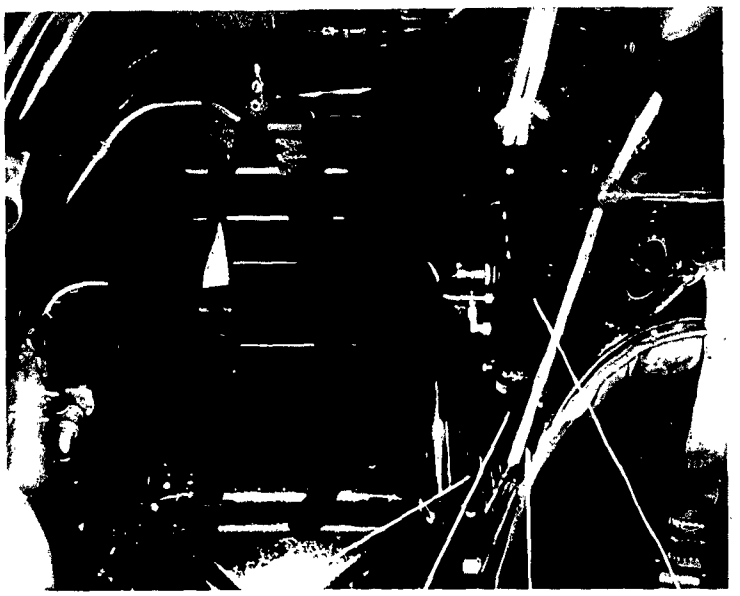


ZBX Aerial

IFF Aerial

AYF Aerials

FIG.3.



IFF Trans-Rec. AYF Trans-Rec IFF Coding Control Unit ZBX Receiver

A. & A.E.E. NEG. No. 16013

FIG.4.

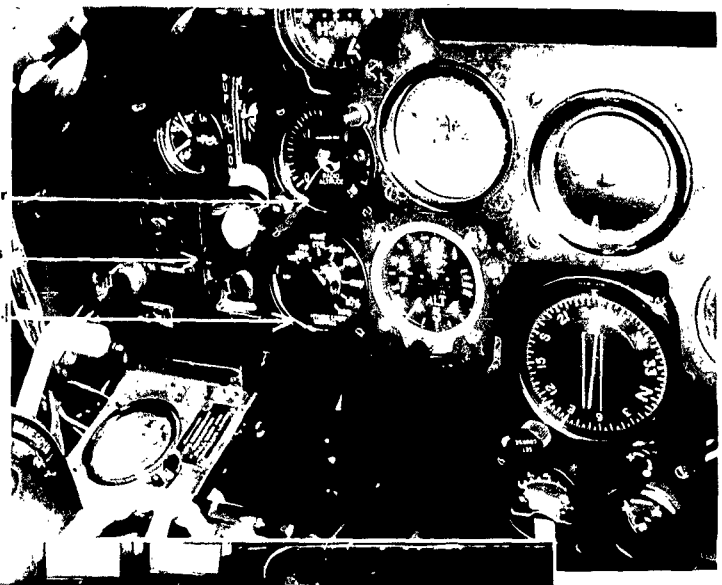
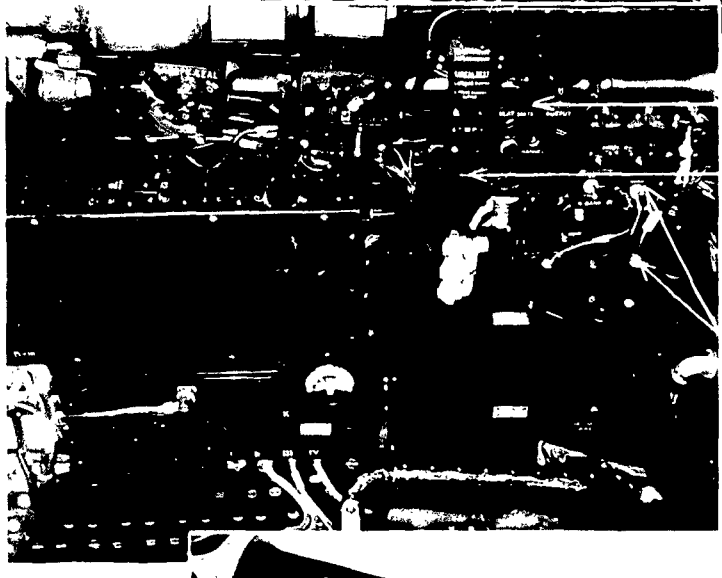


FIG.5.



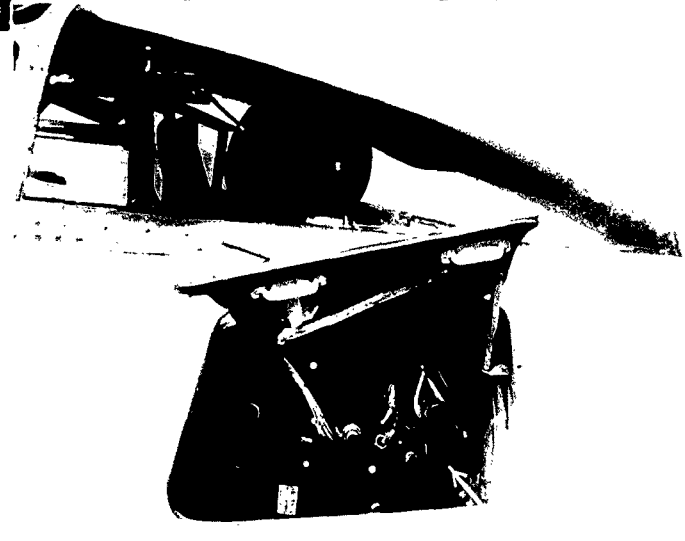
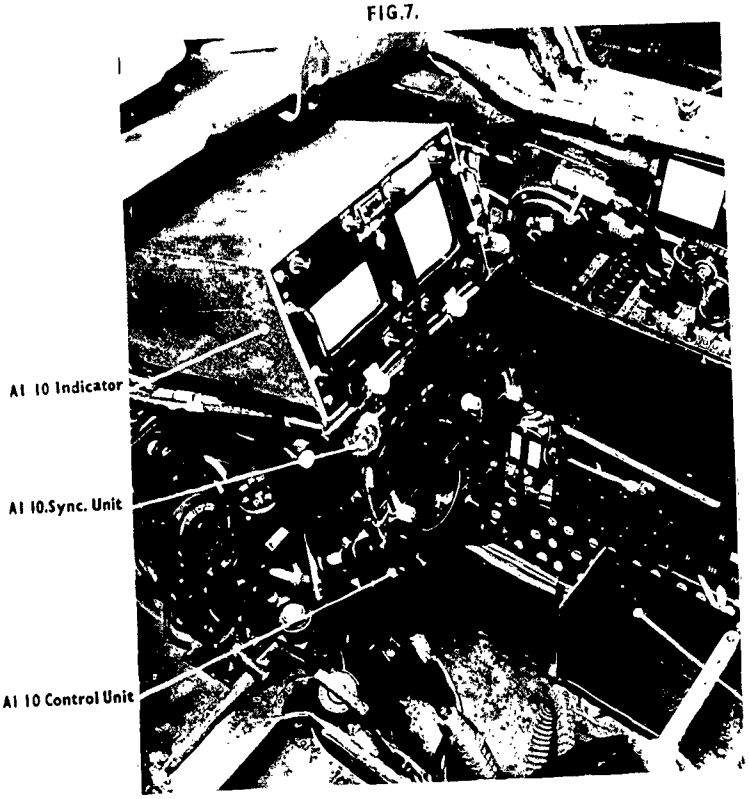


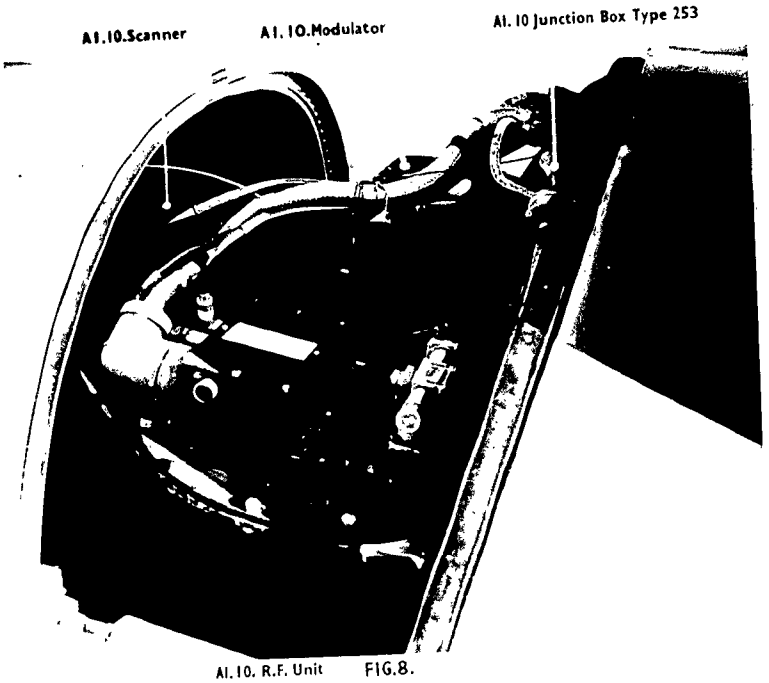
FIG.6.

TR1934 35

A. & A.E.E. NEG. No. 16013

FIG.7.



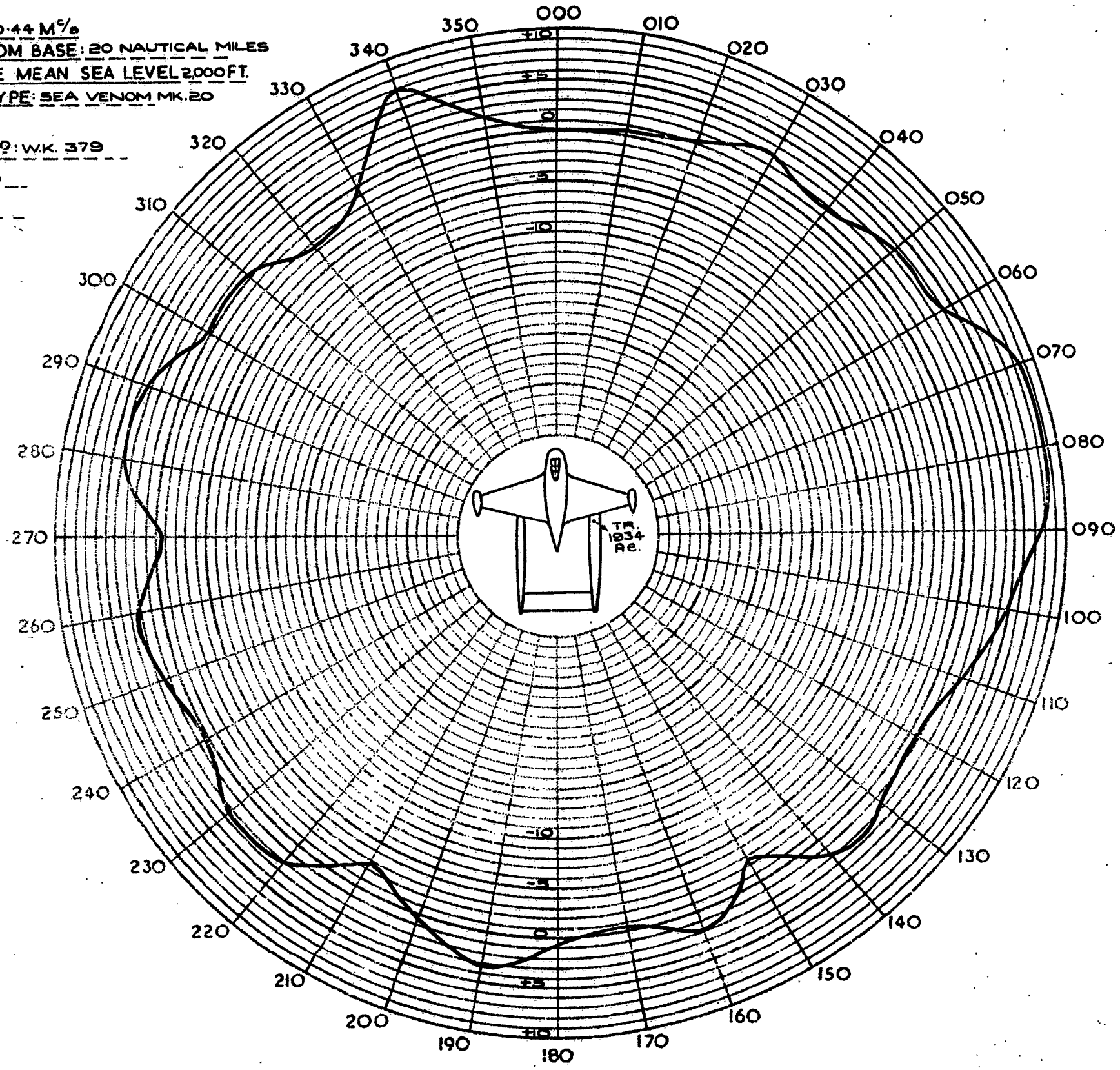


A1.10. R.F. Unit FIG.8.

A. & A.E.E. NEG. No. 16013.

FIG. 9

FREQUENCY 100·44 Mc/s
DISTANCE FROM BASE: 20 NAUTICAL MILES
HEIGHT ABOVE MEAN SEA LEVEL 2,000 FT.
TYPE: SEA VENOM MK.20
AIRCRAFT:
Nº: W.K. 379
DATE: 12-5-53
T.R. 1934



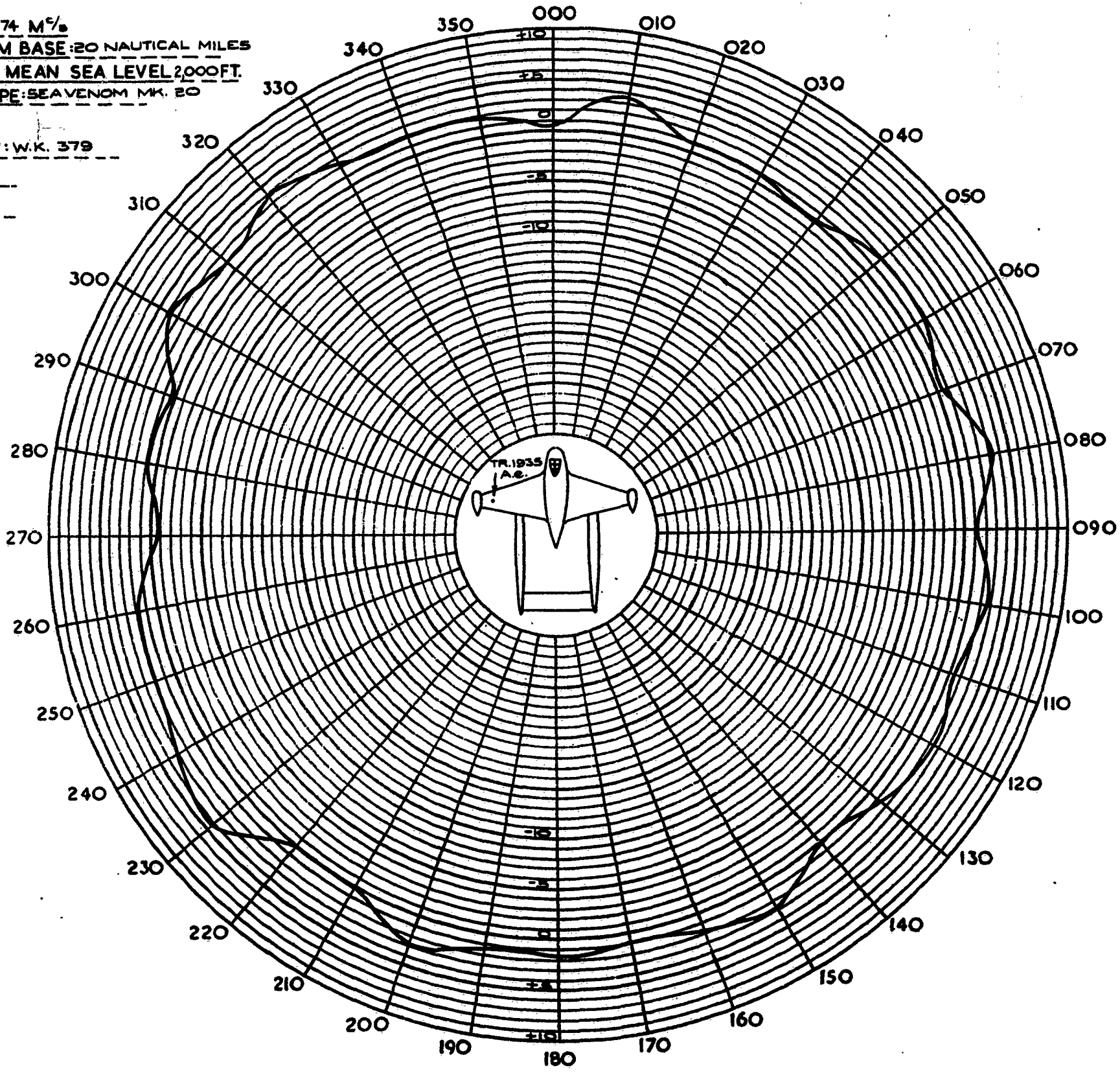
db's ± RELATIVE TO HEAD ASPECT.

V.H.F. POLAR DIAGRAM
OF
AERIAL SYSTEM TYPE 228

SKM 3164 | FOR PART OF REPORT Nº A.A.E.E./866/1 | SEA VENOM W.K. 379 | TR.M. | C.H. C.G. NITHERS | APP. | Mk. for Sof P | 7.1.54.

FIG. 10

FREQUENCY: 142·74 Mc/s
DISTANCE FROM BASE: 20 NAUTICAL MILES
HEIGHT ABOVE MEAN SEA LEVEL: 2,000 FT.
TYPE: SEA VENOM MK. 20
AIRCRAFT:
Nº: W.K. 379
DATE: 6-8-53
T.R. 1935



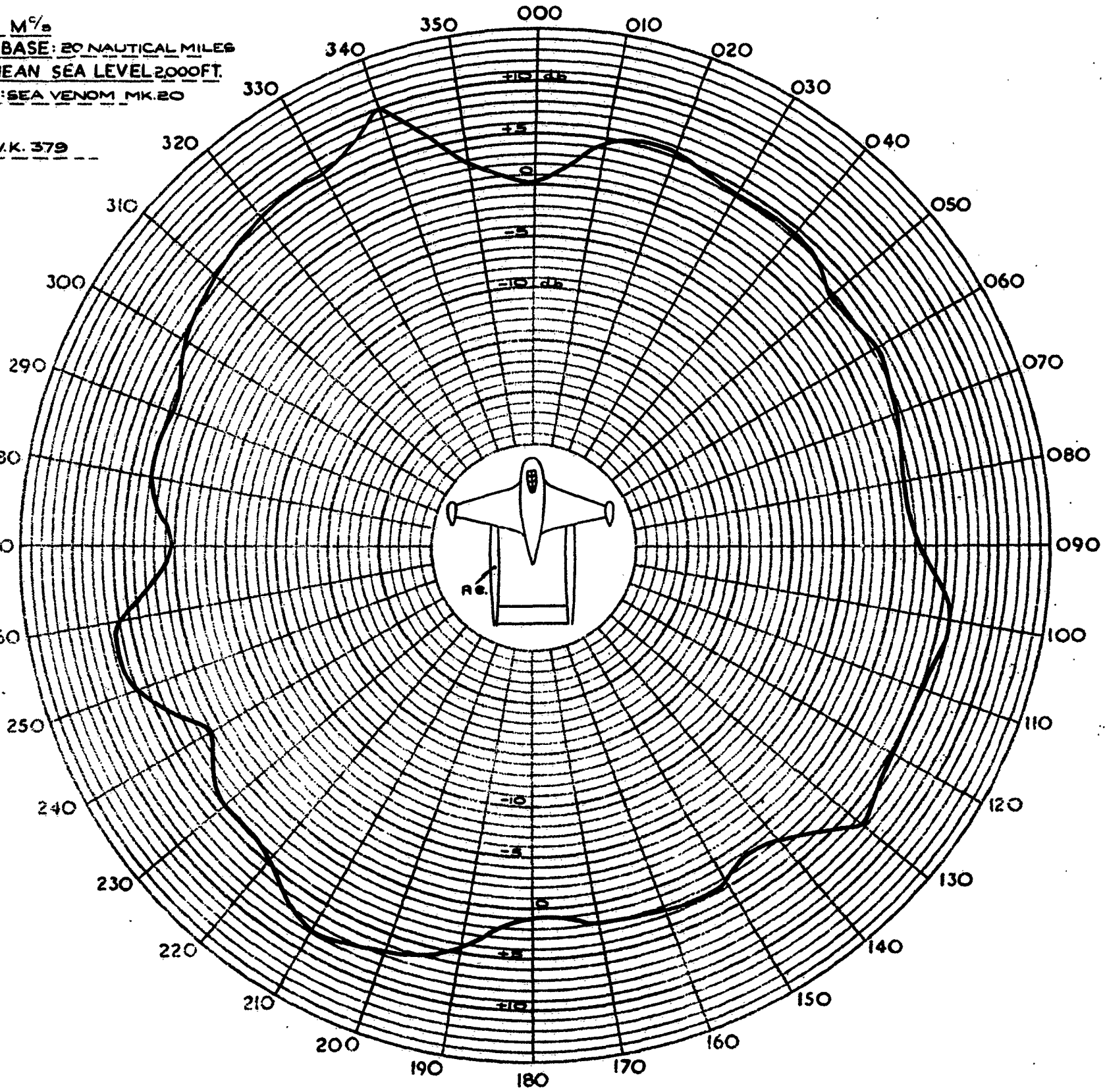
db's ± RELATIVE TO HEAD ASPECT.

V.H.F. POLAR DIAGRAM
OF
AERIAL SYSTEM TYPE 229

S.K.M.S.165 | 10th PART OF REPORT Nº A.I.A.E.E./666/1 | SEA VENOM WK.379 | TR.M.2 | C.H. C.G. WINTERS. | APP. | Ml. for Sof P. | 7.1.54.

FIG. II

FREQUENCY: 176 Mc/s
DISTANCE FROM BASE: 20 NAUTICAL MILES
HEIGHT ABOVE MEAN SEA LEVEL 2000 FT.
TYPE: SEA VENOM MK.20
AIRCRAFT:
Nº: W.K. 379
DATE:
A.R.I. 5679



POLAR DIAGRAM
OF
AERIAL SYSTEM TYPE 90 USED ON AIRCRAFT

SKN.5166 | Nº 1 PART OF REPORT Nº A&AEE/868/1 | SEA VENOM WK. 379 | TR.M.O.D. | CH. C.G. WITHERS. | APP. | for 30 ft. | 7.1.54

SK.No A 5167	PART OF REPORT No A&A.E.E./ 868/1	SEA VENOM MK.20 WK 378	TR. Mk.	CH. C. G. WITHERS.	APP. R.W. for S of P	7-1-5.

I.F.F. (AN/APX-1) 'A' & 'ROOSTER' BAND RANGE TEST.

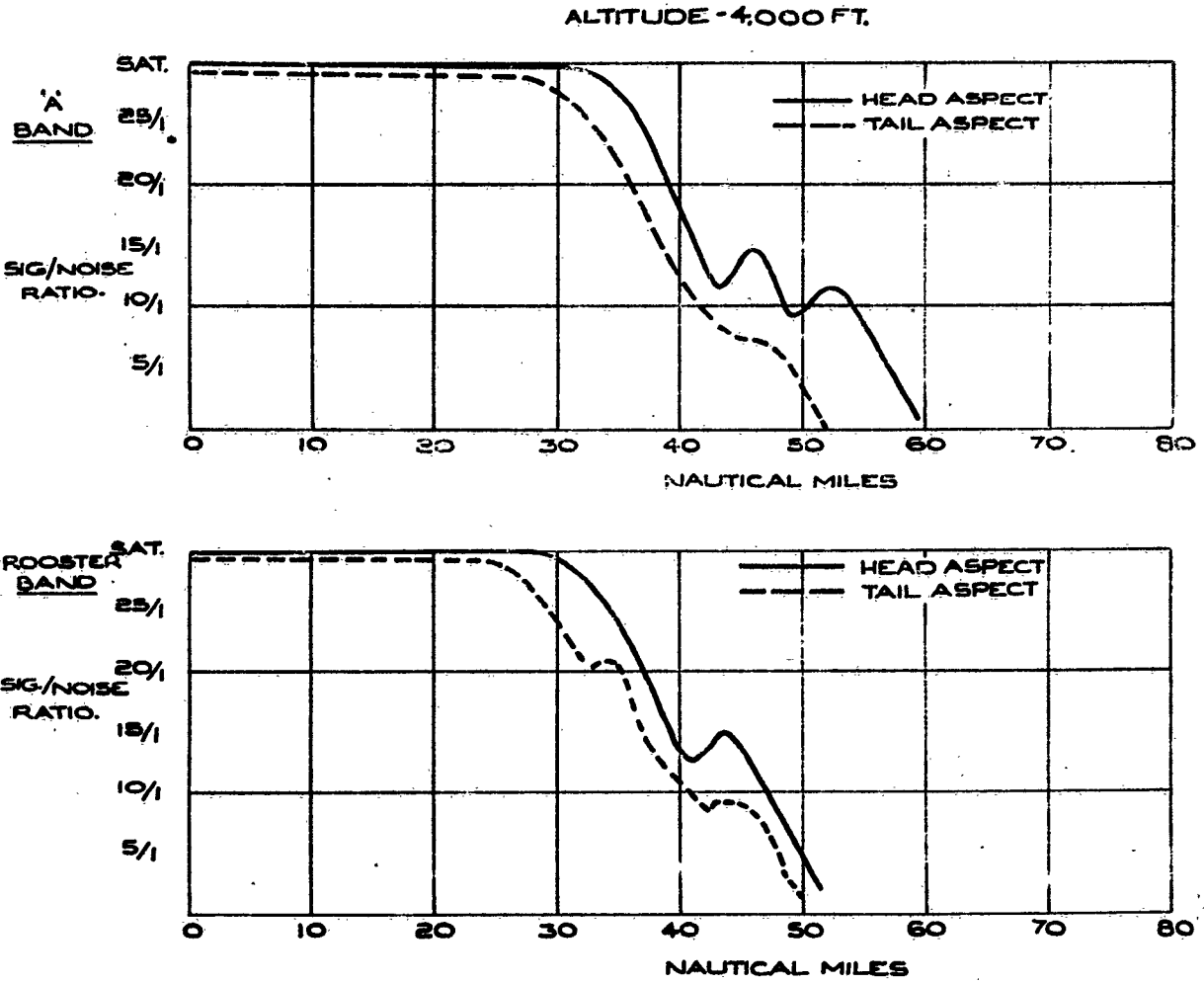
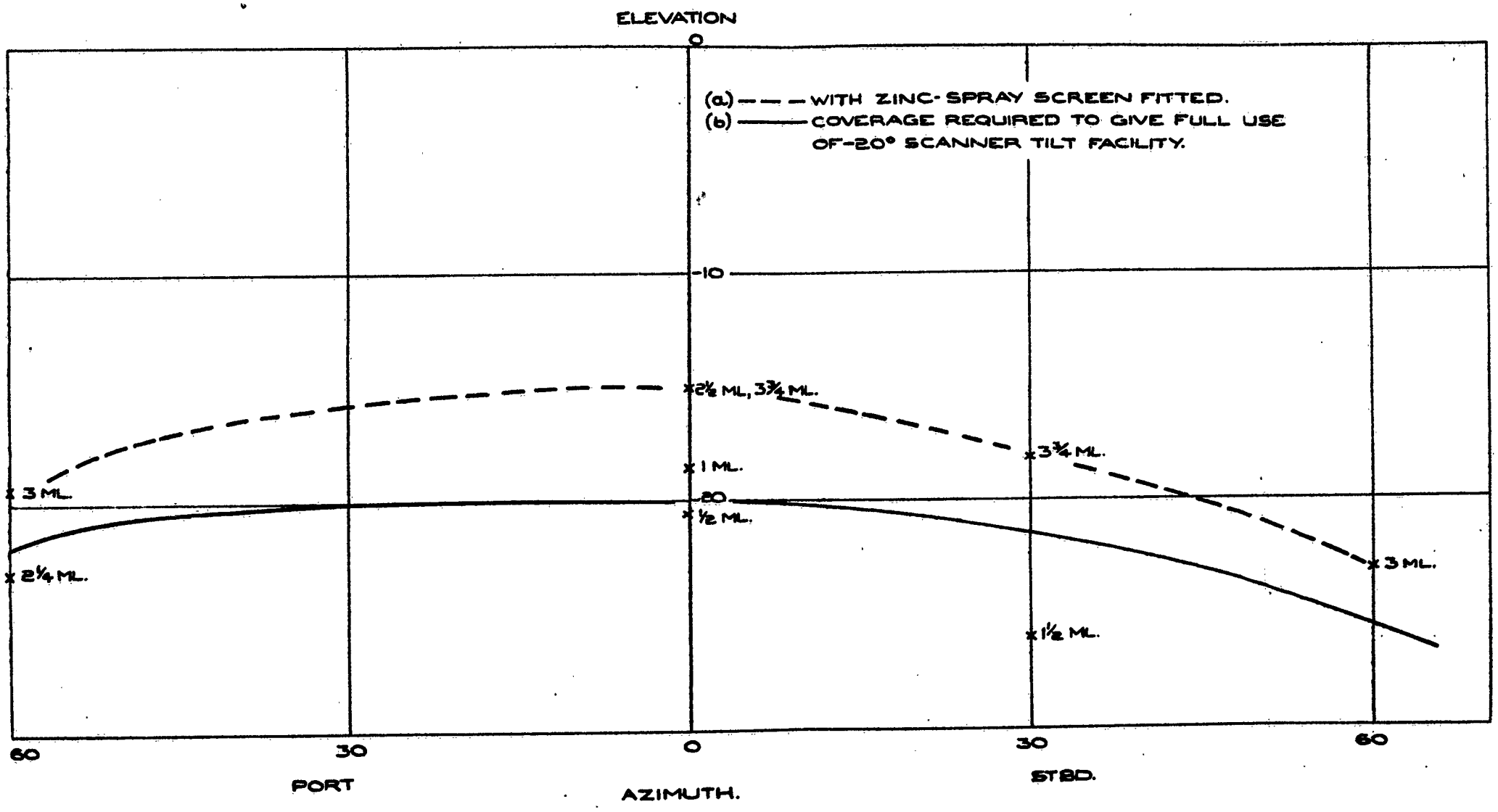


FIG. 12

FIG. 13



A.I. 10 VERTICAL COVERAGE IN SEA VENOM W.K. 379.

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22060-6218
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Defense Technical Information Center (DTIC)
8725 John J. Kingman Road, Suit 0944
Fort Belvoir, VA 22060-6218
U.S.A.

AD#: AD029717

Date of Search: 30 July 2008

Record Summary: AVIA 18/4036
Title: Sea Venom Mk 20 WK.379 (Ghost 3): radio acceptance trials
Availability Open Document, Open Description, Normal Closure before FOI Act: 30 years
Former reference (Department) 868/1 Pt 10
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